

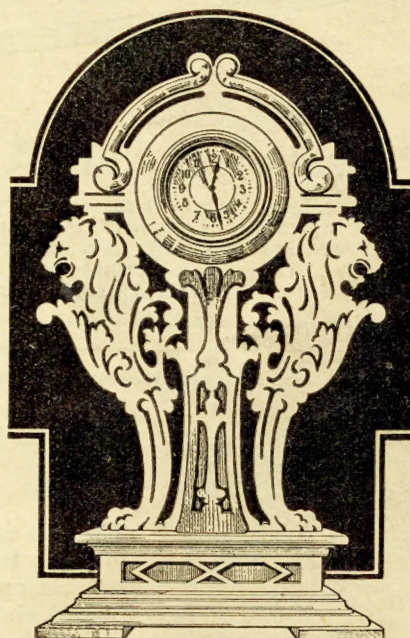
# Hobbies

## WEEKLY

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**LARGE  
FRETWORK  
CLOCK  
DESIGN  
Free Inside**

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NESTING BOXES  
★ ★ ★  
CHIEF SCOUT BIRTHDAY  
WATCH HOLDER  
★ ★ ★  
HOW TO WIND A  
DRUM ARMATURE  
★ ★ ★  
CYCLING NOTES, ETC.

February 19th. 1938

**2<sup>D</sup>**

Vol. 85. No. 2209

**THE FRETWORKER'S AND  
HOME CRAFTSMAN'S JOURNAL**

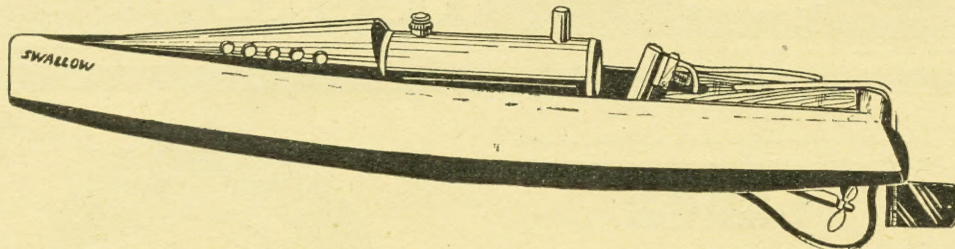


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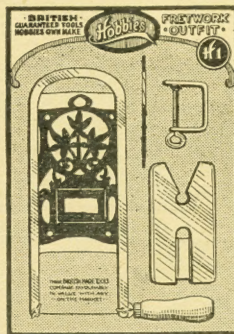
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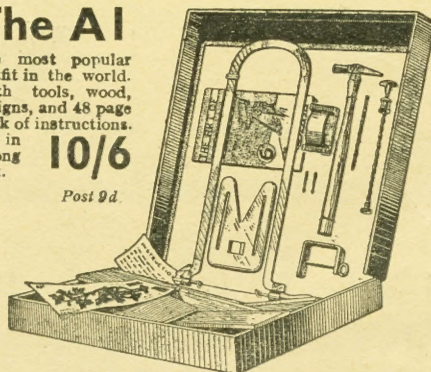


Two cheap cards of fretwork tools. The H1, as illustrated, is 1/6 and the H2, 2/6. Postage 6d. extra on either. Hurry for these.

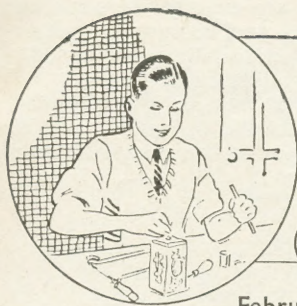
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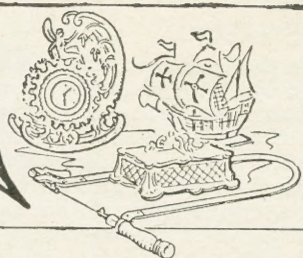






# Hobbies

## WEEKLY



February 19th. 1938

Vol. 85. No. 2209

## FRETWORK CLOCK

**W**HAT do you think of the clock here illustrated? Do you not agree it is an excellent piece of work to make up with the fretsaw from the design patterns provided on this week's gift sheet? It is certainly a striking piece of work for any table or mantelshef. It stands 12 ins. high, is 4½ ins. from back to front, and 7¼ ins. wide.

We suggest it should be built in whitewood which will make up an ornate and dignified article. In addition to supplying the necessary boards planed and cut to the sizes required for each part, we can also provide the necessary clock movement to fit in. You can thus make up the whole thing without any further trouble.

### General Construction

The construction is straightforward, but the parts are so planned to fit together that a rigid and solid piece of work results. There is not too much fretwork in it, and it is combined with a pleasing amount of fitting together of the various pieces so there is no monotony in getting out any large and tiring piece of work.

Before commencing read these instructions, and glance at the detailed drawing which gives you some idea of the actual construction. The flat front view on this page does not show you how the whole thing is built up forward. The base, for instance, is a complete foundation of box-like type, and on this is raised a front and a back framework. The strut passes between them to stiffen them up, then a casing of plywood forms a drum round the hole in the top into which the clock movement is fitted.

That in general is the construction, and one or two points should be noted in the building. The parts are lettered

alphabetically so you can follow them out as you go along. The letter should be marked on the back of the essential parts, although this is not necessary in every case.

Commencing from the base we build up the four pieces forming the hollow frame at A. The two front corners are mitred, but the back has a square rail between the ends. The four little corner feet which project beyond can be added now or later.

On this hollow frame comes the base B of ¾ in. wood from which rise the four fretted sides D, E, F, and G. Two sides stand behind the front, and the back goes between them.

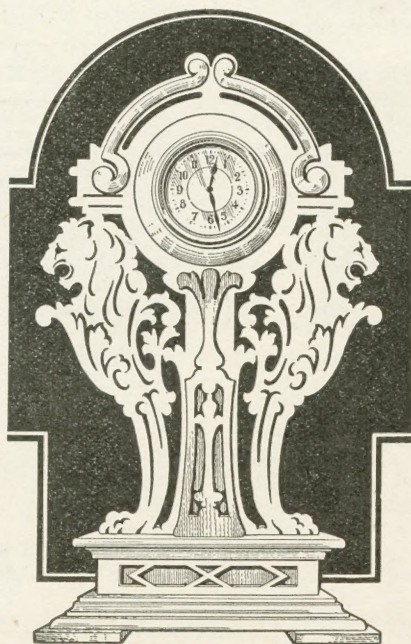
Get the whole thing glued solidly to the base, then add the other one—the base C—on the top of it. It will be a good plan to back up the fretted side and front with some lining material. This can be linen or veneer paper, or even silver tinsel paper flattened out carefully. All of it is glued carefully so the glue does not extend beyond the frets.

### Front and Back

Before adding the base C finally, cut out the front and the back of the clock in order that you may be able to test out the tenons H and I before the clock base is glued on.

The large front of the clock contains a number of elongated frets to form the lion feature which appears to hold the clock itself in place. Between these lions is an overlay cut from ½ in. wood, but this should not be added until the strut coming between the back and the front has been fitted into the tenon at K.

This strut, too, it will be noted, also halves into the back at J, and all these joints must be carefully tested and fitted before the whole thing is finally put together. Thus we have





a base with two upright portions forming the clock holder.

### The Plywood Rim

To the back is added a rim forming an overlay from which a circular hole is cut the size shown, and the same size as that in the front. This overlay actually is glued on the inside of the back—not the outside. It forms the opening with one in the front into which a plywood casing is formed. Cut a strip of plywood 7 ins. long and 1½ ins. wide with the grain running across.

Bend it round to come inside the circular opening in the front and the circular opening in the overlay on the back. Cut off any superfluous length, and see that the width does not extend beyond the face of the upright front and back.

### Fitting the Drum

Glue the drum in firmly with the join at the bottom. Thus when the article is completed the clock movement is fitted in through the front. The back plate when replaced comes flat on to the back overlay and so makes the whole thing dust proof. A detail drawing herewith shows this drum ready to fit in place into the back. Actually, of course, the front has been omitted, although it would really be in place.

On to the front, too, there are a couple of little overlays at the top. They are cut from ½ in. wood and form a scroll pattern round the clock face. The lower overlay on the front can also be added, gluing it down to the base and to the front of the clock itself.

### Fretted Work

We have not, of course, mentioned the actual fretwork, but this must be carried out carefully with a fairly fine grade saw. Where the long narrow frets have to be taken out, make a big drill hole at the widest point in their length. In this way you can work from the drill hole up to the tapering point first.

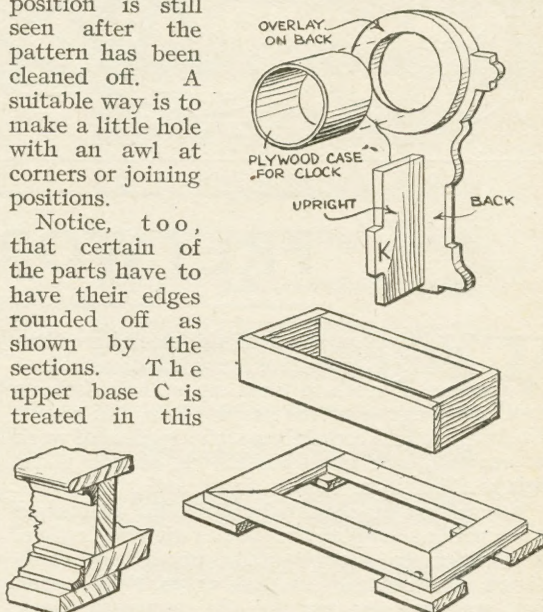
Then back the sawblade carefully to the hole, and go down the other side of the narrow fret until you gradually meet the first cutting line. The work is turned round then and two similar cuts made to the other end of the fret.

Take care to keep the whole design balanced so

the features of the lion are exactly the same on each side. Do not forget, too, to turn the pieces over and clean up the back to take away any odd roughness on the edges of the cutting lines.

Various helpful dotted lines are given on the design parts. These should be noted, and if necessary some notification of them made so their position is still seen after the pattern has been cleaned off. A suitable way is to make a little hole with an awl at corners or joining positions.

Notice, too, that certain of the parts have to have their edges rounded off as shown by the sections. The upper base C is treated in this



Constructional view without floors and front

The base parts way, and the ½ in. thick overlay round the clock face has one edge rounded.

Finally, a rim of moulding (No. 307) is glued on the underside of the clock and to the base A as shown by the detail above. It is carefully mitred at the corners then glued firmly into the rightangles of base and uprights.

### MATERIALS REQUIRED

**Fretwood.**—For making this design we supply a parcel of whitewood and satinwood, including sufficient No. 307 moulding for base for 3/6 (post free 4/-).

**Fittings.**—Clock movements (No. 5502) 5/3 or (No. 5506) 3/9. Postage 3d.

Postage on wood and clock when sent together, 6d.

## Binding Cases for your Hobbies

TO make a lasting book of reference you should keep your Hobbies Weekly in a suitable binding case, complete with index. Two kinds of cases are obtainable at small cost, each taking 26 issues (six months). One is in red cloth with gold letters and costs 1/6. You can get any stationer to bind your copies in this quite reasonably.

The other case you use yourself by fitting in each copy with wire staples supplied. This is the Azabook Binder sold complete with two dozen fixing staples for 3/3.

An Index for any volume is obtainable for 4½d. from Hobbies Ltd., Dereham, and if you order these goods by post, add 3d. to cover return postage and packing. Keep your Hobbies complete and neat in this simple way.





# TWO MODERN STANDS FOR SMOKERS

WE give this week two designs for really modern Smokers' stands which should be made up in either mahogany or oak. The height of the stand A is 22½ ins., and the top takes a china dish (Hobbies No. 6030) recessed into the top.

A side view of each stand is given in Fig. 1, and each part is lettered so the cutting list given may be followed.

The base of stand A is formed from the two ½ in. pieces A and B glued together. The upper piece (B) has two mortises cut in it, one square, to receive the main upright, and one oblong one to take the foot of piece C.

## The Tray

The square opening should measure 1 in., while the oblong one is 2 ins. long and ½ in. wide, the positions being given in Fig. 2. Glue the two pieces A and B, and then glue round in the angle four pieces of Hobbies No. 307 moulding. The circled detail (Fig. 2) shows the moulding glued to the base, with the edges of the latter rounded off for better appearance.

Three oblong shape feet (H) are glued and screwed (Fig. 2), each foot projecting beyond piece A ½ in.

## The Upright Shape

The upright D is a length of 1 in. squared wood. Before gluing into the base the two pieces C and E should be made and the shaping of these got

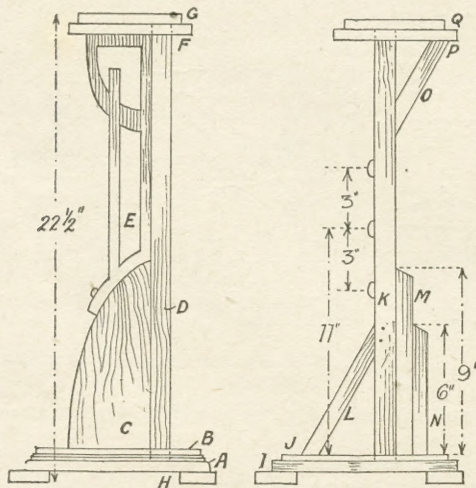
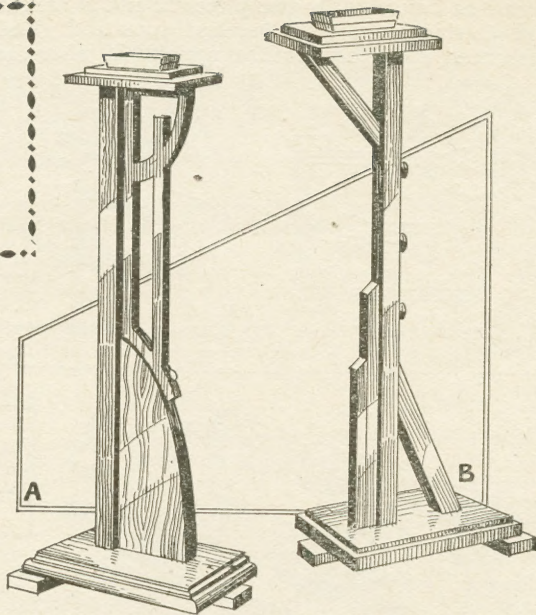


Fig. 1—Details and dimensions of parts



from Fig. 3. Set out the 1 in. squares shown in the diagram, and draw in the shapes and outlines and afterwards cut them with a fairly coarse fretsaw. Glue the two pieces to D and see a tight fit is made into the base.

The top of the stand is formed from two pieces of ½ in. stuff (F and G). Cut an oblong from piece G measuring 4 ins. by 2 ½ ins. to allow the dish to fit.

The top piece F must be carefully centred and the 1 in. square hole cut to admit the upright. Glue the pieces together and glue them to the top edge of piece E, and to the upright D.

## The Stand B

The construction of this stand is similar to the other, but is simplified by having squared supports.

The base is made up like the former design, but without the added moulding round the edges. The upright, or stem of the stand (K) is the same and let-in at top and base

## CUTTING LIST

- A—1 piece 9 ins. by 7 ins. by ½ in.
- B—1 piece 8 ins. by 6 ins. by ½ in.
- C—1 piece 9 ½ ins. by 4 ins. by ½ or ¾ in.
- D—1 piece 21 ins. by 1 in. by 1 in.
- E—1 piece 13 ½ ins. by 3 ½ ins. by ½ in.
- F—1 piece 6 ins. by 6 ins. by ½ in.
- G—1 piece 5 ins. by 5 ins. by ½ in.
- H—3 pieces 2 ins. by 1 ½ ins. by ½ in.
- I—1 piece 9 ins. by 7 ins. by ½ in.
- J—1 piece 8 ins. by 6 ins. by ½ in.
- K—1 piece 20 ½ ins. by 1 in. by 1 in.
- L—1 piece 7 ins. by ½ in. by ½ in.
- M—1 piece 9 ins. by ½ in. by ½ in.
- N—1 piece 6 ins. by ½ in. by ½ in.
- O—1 piece 5 ½ ins. by ½ in. by ½ in.
- P—1 piece 6 ins. by 6 ins. by ½ in.
- Q—1 piece 5 ins. by 5 ins. by ½ in.
- Moulding No. 307.
- 2 pieces 8 ½ ins.
- 2 pieces 6 ins.
- 3 No. 20 Turned Toes.
- 1 No. 19 Turned Toe.

Fig. 3—Stand A shape



same as before. The two pieces M and N are cut off to size given with bevelled tops and glued together and glued to the upright K after the

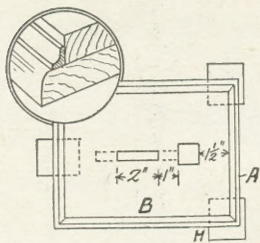


Fig. 2—Plan of base

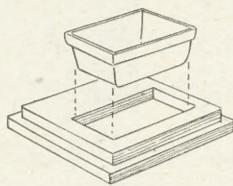


Fig. 4—The top and ash tray

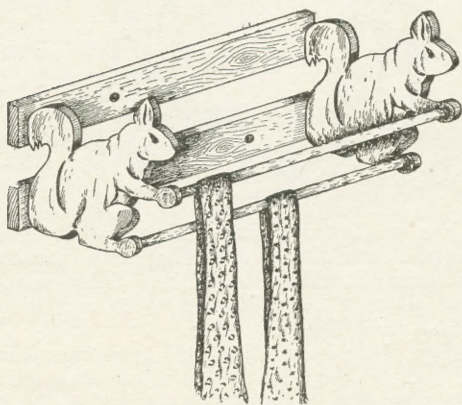
latter has been glued into the base.

The sloping pieces L and O each have one of their ends cut off to an angle of 30° and one to 60° and glued in place. The only addition is to the upright, upon which is glued three No. 20 turned buttons in the positions figured on the side view in Fig. 1.

A smaller button may be added to the first stand where the pieces C and E meet in the front to hide the screw.

If the stands are made up from mahogany the wood should be stained and french polished, the fretted parts being done with the brush.

If oak is used, lightly stain and varnish or oil.



**T**HE tie rack indicated in the accompanying illustration is just the thing for a boy's room, and will help to keep a selection of ties handy and also neatly in place. The work of making the rack is quite simple and is done in the following manner.

Two ends are required and these are in the form of a squirrel as indicated in Fig. 1. First cut a piece of 1/4 in. wood 4 ins. by 4 ins., and then mark off the surface into 1/4 in. squares.

It is now quite a simple matter to draw the outline of the figure by following the diagram in Fig. 1, and the two tenons at the back are carefully marked

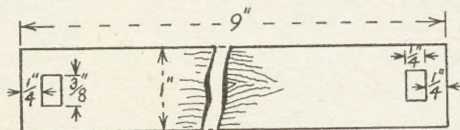


Fig. 2—The long back rails

#### CUTTING LIST

2 pieces 4 ins. by 4 ins. by 1/4 in. thick.  
2 pieces 9 ins. long by 1 in. wide by 1/4 in. thick.  
2 pieces of 1/4 in. dowelling 8 1/2 ins. long.

3/4 in. wide by 1/4 in. deep in the positions indicated. Carefully cut the figure out with a fretsaw, and then the other one can be marked off from this and likewise cut out.

The two squirrel ends are supported by two back strips and these are indicated in Fig. 2. Cut two pieces of 1/4 in. wood 9 ins. long by 1 in. wide, and

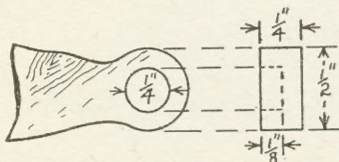


Fig. 3—Front and end view of support pieces

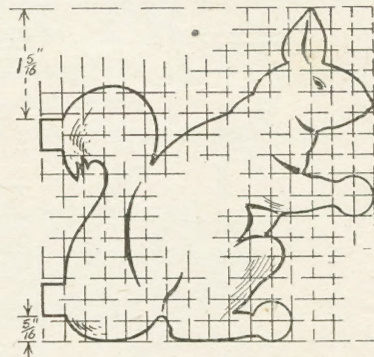


Fig. 1—How to mark out the squirrel shape

then carefully cut the mortise 1/4 in. from each end making them 1/4 in. wide by 3/8 in. long as shown.

Now the feet of the squirrels are drilled out from the sides which are to face inwards to take the rack supports for the ties. These holes are carefully made 1/4 in. diameter 1/4 in. deep as shown in Fig. 3.

#### Rack Supports

For the rack supports cut off two pieces of 1/4 in. dowelling 8 1/2 ins. long, and well smooth them up with fine grade glasspaper. The whole of the parts thus cut are smoothed up and then the shading of the squirrels may be done in enamel paints.

Fix one of the ends into the two back supports and then fix the two rack supports into position, and then slide the other end into position in the back pieces and at the same time on to the ends of the tie supports. Providing the joints have all

been well made it only needs a little glue to make them secure.

The rack when finished, may be fixed in position on the wall in the room by means of two Rawlplugs and screws through the back supports.





**N**OW is the time to begin thinking about that new bicycle. You are probably intending to get rid of the old one which is much the worse for wear and tear, or, perhaps you are trying to decide upon your first machine.

You will, of course, desire to have it all ready for the springtime, when sun-bright days call us forth once more to green, leafy byways and pleasant country places.

What kind of machine shall I buy? This question is sure to arise. It all depends whether you want a sports model, a racing model, a roadster, or a touring type. Some like one pattern, some another.

The majority, however, plump for a touring model, for this answers both as a roadster for all ordinary cycling about home, and also for going on tour.

#### Get a Good One

There are so many patterns and makes of bicycles nowadays that little difficulty should be experienced in obtaining a machine to suit the individual. Remember, it pays in the long run to obtain the best, and the best only.

There are cheap machines that are tempting because of their low price, but they are not worth troubling about.

For that matter, there should be no obstacle as regards cost, for you can obtain, on the hire purchase system, all the best makes.

Whichever way you decide upon in purchasing a machine, be sure you get what you want. For touring, an up-to-date, easy-running, lightweight bicycle, with either two or three speeds, is the best model. Most of the big firms make such models.

#### See Them for Yourself

Before deciding, it is as well to have a look round. In your town there will be several agents, no doubt, representing the more noted firms. By calling in at each shop and asking to be shown the various models—and the cycle dealer is only too glad to tell you and show you all he can—you will gain a good idea of what you may choose.

Prices vary, of course, and you can buy machines at all prices from £3 to £18 including tandems.

An interesting fireside occupation during the evenings is to study a number of cycling catalogues. You can get lists from all the leading firms by applying to them—a post card will bring you a catalogue per return.

Try the three or four firms whose models you fancy most. Pick out the types that appeal most

as you study the pages of each catalogue, and then, if possible, call at each agent's shop and see, and feel, the machines.

#### Not Too Heavy

Some machines are very strong and very nice-looking, but also very heavy. Avoid such, for you should be able to get a lightweight that is both light and strong and reliable.

Do not be tempted to get a machine with a very low and small frame, for the idea that a small frame is lighter and therefore faster and easier to push may be alright, but it is also true that the small frame is more erratic in its steering, especially over a bumpy road.

A 21in. or 22in. frame is the best for the average young fellow.

#### How to Measure Frame

Frame size, you may like to know, is the distance from the centre of the bottom bracket to the centre of the seat lug measuring along the seat tube. A tall man needs a larger frame, unless he likes a very long seat pillar, and that is a bit awkward at times, for it tends to whip sideways when the rider is pushing hard. The frame should be rigid. Do not sacrifice strength to lightness.

Wheels should be 26in. diameter, with tyres 1½in. diameter and here again, remember that it pays to have the best tyres you can afford; the better class of tyre wears longer, grips the road

### THIS AUSTRALIAN COMMEMORATIVE DESIGN NEXT WEEK





better, with fewer risks of side-slips, and rides easier.

### About Gears

Gears and gearing are a matter of some importance. You may choose either fixed, free, or variable gearing. For all touring purposes and to a large extent general knockabout riding a variable gear, known as the two-speed or the three-speed gear, as the case may be, is the best.

The average rider, who just uses his or her machine for pleasure cycling as distinct from club riding or racing, will find the variable gear helpful. The extra weight is set off by the ease with which you can climb gradients by dropping into "low gear."

The dealer will be glad to give his help in the matter when you are inspecting a machine.

### The Two Types

The difference, by the way, between the variable gear and the new-type derailleur is that the former obtains its changes by taking the drive through a train of pinions; the latter operates by moving the chain from one hub sprocket to another, and by fitting different sprockets the rider can vary the percentages of change. The ordinary variable

gear, however, gives fixed percentages of change according to the type of hub in use.

Another thing to watch when purchasing a new bicycle is the saddle. Comfort is the most important factor in the choice of a saddle, but you also want a good wearing one. It is well to get a machine that is provided with a saddle of a good reliable make.

### Saddle Tips

Beware extremely narrow saddles, they are of no use for general utility, though they are alright for track work. A useful type is the 11 in. by 6½ in. pattern, moderate width and length, with a rigid surface that helps you when pedalling.

You can obtain a saddle with either soft top or hard top to suit your own ideas. The soft top affords greater resilience, and no "breaking-in" is required to get the maximum comfort.

It may be added that the soft top is one of the most popular types of saddles in present-day use.

Remember, a cheap saddle soon gets out of shape, warps, and becomes a very uncomfortable seat.

Handlebars vary much, and it is, perhaps, a matter of individual taste as to the kind you prefer. For utility, however, and ease in riding, the flat handlebars take some beating, when touring or riding on day trips.

## HOBBIES LEAGUE CORRESPONDENCE CLUB

*These Members of Hobbies League would like to get in touch with other readers and so form pen friendships which will undoubtedly prove interesting to all. In this way, one has a wide circle of friends and increased knowledge in people and places, not only in one's own country, but all over the world. Members should write direct to the addresses given, stating their full address and age, adding any hobbies in which they are interested. Hundreds of members have already taken advantage of this Correspondence Club in this way and others who wish to do so should notify the Registrar with the necessary particulars.*

NAME	ADDRESS	WANTS FRIENDS	INTERESTS, Etc.
W. Walker.	34, Hesketh Street, Ashton-on-Ribble, Preston, Lancs.	Anywhere.	Collecting, Model Making and Engineering.
A. H. Pearce.	5, Rosemary Homestead, Swillett, Chorley Wood, Herts.	British Empire and Overseas (35-40 yrs.)	Fretwork and Stamp Collecting.
E. Teal.	Laverton, Kirkby, Malzeard, Ripon, Yorks.	Anywhere, except Gt. Britain (17 yrs.)	Fretwork and Woodwork.
L. Howell.	111, Commercial St., Maesteg, Glam., S. Wales.	Anywhere Abroad, (13-14 yrs.)	Anything.
J. A. Noble.	9, Livingstone Rd., Hove, 3, Sussex.	England (about 38 yrs.) (if possible Hove or Brighton).	Arts and Crafts, Carpentry
A. Freeman.	75, Townsend Lane, Kingsbury, London, N.W.9.	Anywhere except England (13-15).	Fretwork, Theatricals.
Miss. V. H. Morton.	Hewferry Hill House, Northwood, Middx.	Anywhere.	Anything.
Saad El-din Mohamed.	Nile St., 3rd. Storey, Modern Dental Co., Sohag, Egypt.	Anywhere.	Exchanging Stamps and Photographs.
L. Mason.	Norton House, Fleet, Aldershot, Hants.	Australia and New Zealand.	Fretwork and Stamps.
P. Swindlehurst.	Six Elms, Ashbourne Rd., Leek, Staffs.	Boy 13-14 in Tristan da Cunha, Hyderabad, Alaska.	Stamps, Bees, Woodwork or Magazines.
A. Amos.	6, Dryden St., Salt River, Cape Town, South Africa.	Anywhere.	Stamp Collecting.
Miss M. Crow.	8, The Sands, Durham.	Canada. Boy (16 or 17).	Postcard View Collecting, Cycling and Fretwork.
G. Lennox.	Burrow Hill Colony, Frimley, Surrey.	Anywhere Abroad.	Stamps and Scouting.
R. O'Sullivan.	8, Glen Terrace, Waterford, Ireland.	Anywhere except Brit. Isles and New Zealand.	Collecting Stamps and Snaps.
J. S. Mungro.	R.R.H. 1, Bartonville, Ontario, Canada.	Anywhere. Boys or Girls.	Anything, especially Stamp Collecting.
Neville Brodie.	"Cricklewood," Chesterfield Rd., Oran-jezicht, Cape Town, S. Africa.	Anywhere.	Matchbox Labels and Post-cards of Ships.
P. J. Sibley.	"F" House, Royal Masonic (Sen.) School, The Avenue, Bushey, Herts.	British Empire, America.	Stamps and Fretwork.
J. Richards.	11, Gordon St., Burton-on-Trent Staffs.	Anywhere Abroad.	Photography, Stamp Collecting and Fretwork.
R. C. Sherson.	Wesley College, Paerate, Auckland, N. Zealand.	Anywhere.	Stamps.
D. Caldwell.	Wesley College, Paerate, Auckland, N. Zealand.	Anywhere.	Stamps.



# The "CHIEF SCOUT" WATCH STAND

It is of particular interest to Scouts that Tuesday next, February 22nd is the Chief Scout's birthday, and Lord Baden Powell will undoubtedly receive world-wide congratulations and wishes on such an event.

To commemorate it we have produced a special little handy design for Scouts to make in fretwood, and complete patterns are shown in the centre pages of this issue.

As most of our readers know, the Chief Scout founded the Movement in 1908 at an experimental camp at Brownsea Island, and the membership of it now exceeds two and a quarter million, with troops or patrols in nearly every country in the world, and certainly in all parts of the British Empire.

As an outcome of the original Movement there are, of course, the Girl Guides and the Cubs, but all acknowledge Lord Baden Powell to be "The Chief."

## A Useful Stand

Thus it would be very appropriate for every reader who is a member of this great Movement to make up the handy little watchstand illustrated here.

It is a practical little piece of fretwork, and in addition contains a picture of the Chief Scout in a typical camp attitude. The picture itself is supplied by us, and is a nicely printed photograph on art paper. It just fits into the circular opening in the main pattern, and will serve as a constant reminder of a wonderful man.

The watch holder as illustrated is intended for a wristlet watch, and this is easily hung on by means of putting the straps through the slots at the top and bottom of the sloping panel.

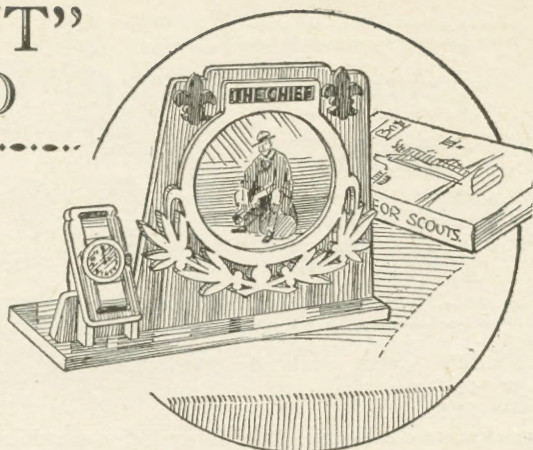
## The Main Base

Any ordinary fretwood will do, and the work of construction is simple. Beyond the patterns shown full size we shall require a base, the dimension of which are given on scale drawing with the other patterns.

Notice the position of the mortise in the base and make this  $\frac{3}{16}$ in. wide to accommodate the projecting tenon in the main back. Mark the sizes on to a piece of  $\frac{1}{4}$ in. wood for this base very carefully, using a ruler and square to ensure the corners being rightangles.

Paste the other parts down to wood, taking note to get the patterns in the same direction as the grain all through. Then cut out with the fretsaw, and clean up with glasspaper in the usual way.

In cutting out, leave the large circles until last and ensure there is room in the main back for the piece of glass provided. A piece of circular glass suitable for this is supplied by Hobbies. It is No. 5839 and costs 6d. post free.



The necessary glass and photograph of the Chief Scout are supplied quite cheaply.

Have it at hand before you cut out the actual circle to ensure the aperture is large enough. Fit the main back to stand into the slot in the base, and glue it upright there. Strengthen it by adding the two little pieces behind. They are glued to the base and to this main back.

## Our Picture of the Chief

A very nice photographic print of the Chief Scout in a characteristic attitude and in a circle just the size required, is supplied by the Editor for 2d. and should be ordered with the glass.

Cut out the overlay and glue it centrally round the opening in the back. This allows the glass to be put behind. The picture of the Chief Scout is placed next, then the remaining thickness of the wood is filled up with blotting paper or brown paper, a piece of card or even a piece of wood. The board is cut the same diameter circle then finally a piece of brown paper pasted over the back to hold everything in place.

The pieces forming the watch rest support halve into this main back, and the little slots at A. Cut these to make a good fit then glue in position. The watch rest itself is cut from only  $\frac{1}{4}$ in. wood with little openings to take the wristlet strap.

## Suitable for Pocket Watch

If you have a pocket watch instead of a wristlet you can quite easily omit the slots and add a little watch hook for hanging.

The rest is glued securely to the sloping supports, and it will be a good plan to drive in a couple of little nails to give further strength. Thin fret nails should be used, and the heads cut off flush with the face of the wood.

The Scout emblems are also cut from  $\frac{1}{4}$ in. wood, and are glued where shown by the dotted lines on the pattern of the back. The top of the fleur de lis will project a little above the back.

The whole thing can be painted or stained, and a good plan to make the work more effective is to colour the lettering "The Chief" in gold or silver and run a framework round it as a painted line in a similar or contrasting colour.



# THREE SIMPLE NESTING BOXES

**B**IRD lovers naturally like to encourage their bird friends to nest in the garden, and this can easily be done by providing some nesting boxes for their accommodation, especially if a net bag of nesting material is suspended thereby.

The size of these boxes is of no particular moment, within the bounds of reason, of course. Some fairly generous dimensions are given in Figs. 1 and 2 for a box, but these can be amended to suit larger or smaller birds, as required.

A suitable wood to use is oak, it stands exposure to the weather well, but beech or red deal could be used if kept painted outside, or creosoted. A thickness of  $\frac{3}{8}$  in. is enough for the boxes.

## Perches

The perches can be cut from short lengths of  $\frac{3}{8}$  in. dowel rod, say  $2\frac{1}{2}$  ins. long and glued in. The entry holes for the birds can be from  $1\frac{1}{2}$  ins. to 2 ins. diam. Glue and nail the parts together to form the box, using waterproof glue for preference. The lid, which overlaps front and sides by  $\frac{1}{2}$  in. can be hinged, but is preferably screwed down where young people are about.

There is a great temptation to raise the lid too frequently to view the nest and eggs, with the result that the bird is frightened and forsakes nest and eggs quickly. Use brass screws for fastening, one each side, as they are easier to withdraw when the interior of the box

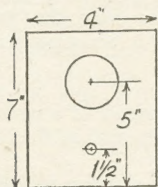


Fig. 1—Box front

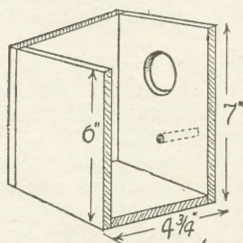


Fig. 2—Box construction

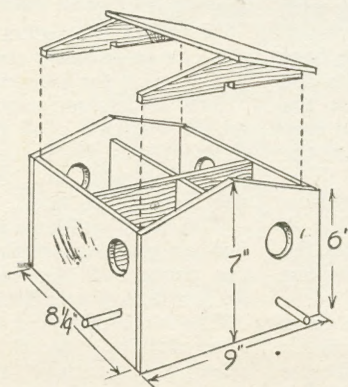
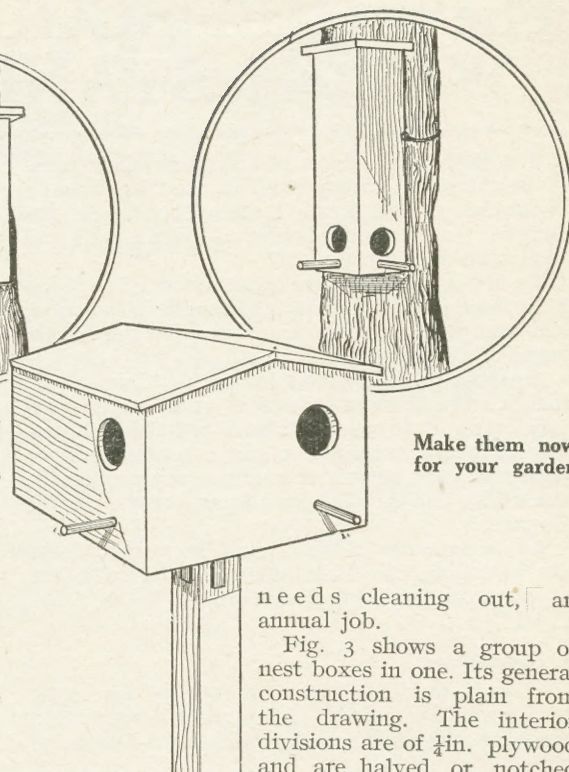


Fig. 3—A 4-compartment box



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Fig. 3 shows a group of nest boxes in one. Its general construction is plain from the drawing. The interior divisions are of  $\frac{1}{4}$  in. plywood and are halved, or notched

together at the centre and secured to the sides of box with fine wire nails.

The roof is nailed to wooden strips, the strips themselves fitting tightly between the ends of the box. No other fastening is needed, but a single screw at each end.

This pattern of box is obviously not suitable for attaching to a tree trunk, so is supported on a stout post.

## The Post

A post about 3 ft. high and inserted 2 ft. in the ground will serve unless there is likely to be danger from rats or prowling cats. In this case let the post be say 6 ft. high or slightly less, for safety sake, and 3 ft. in the ground. The end entering the ground should be creosoted, the remainder can be painted white if a good appearance is desired.

(Continued foot of page 514)

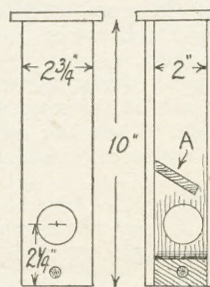


Fig. 4—Food hopper

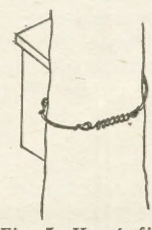


Fig. 5—How to fix the boxes with wire and spring



# A FOLDING PING PONG TABLE

THE popularity of ping pong or table tennis has gone on for many years and has now become one of the most interesting of home games. Those who wish to play it with all the advantages of a rigid table, will want to make up something of the type shown in the accompanying drawing.

This table is compact and can be folded up flat when the game is finished. It can be stored in quite a small space and at the same time there is no trouble with the legs falling out of position. Each leg is secured against the frame when it is put away for the night by the brace being hinged. It can be made firm and steady when opened up in a similar manner.

A table of this kind can be used for other purposes about the house; in the yard; at alfresco tea parties; or set up in any position where a large working surface is required.

## MATERIALS REQUIRED

- 2 tops three or five plywood 47ins. long by 48ins. by  $\frac{1}{2}$ in.
- 6 legs 29 $\frac{1}{2}$ ins. by 3ins. by  $\frac{1}{2}$ in.
- 4 pieces frame 48ins. by 1 $\frac{1}{2}$ ins. by 1 $\frac{1}{2}$ ins.
- 6 pieces frame 47ins. by 1 $\frac{1}{2}$ ins. by 1 $\frac{1}{2}$ ins.
- 8 pieces for legs to swing on 8ins. by 1 $\frac{1}{2}$ in. by 1in.
- 2 edge rails 47ins. by 3ins. by  $\frac{1}{2}$ in.
- 4 edge rails 48ins. by 3ins. by  $\frac{1}{2}$ in.
- 6 metal braces for legs.
- 6 dowel pins  $\frac{1}{4}$ in. diam. metal rod.

Since the table folds in two, the top requires to lie in two pieces. The legs swing up against the underside, so that when the table is folded up the legs are inside the box formed by the table. The size of the table when folded is 48ins. by 47ins. by 6 $\frac{1}{2}$ ins.

## The Legs

In making up the table, prepare the legs to the shape shown in the drawing at Fig. 2. These are 29 $\frac{1}{2}$ ins. long and square on both ends.

The top end of each leg is the full breadth 11ins. from the top and from there it is reduced to 1in. at the floor end. An equal amount is planed off each edge so that we have a triangle of 1in. at the base and 18 $\frac{1}{2}$ ins. high, plane off both sides.

Round the top ends of the legs semicircular

so that they will swing easily when opening out.

The legs are now ready for boring for the pin hinges. The first thing to do in this operation is to prepare the metal pins, these are cut from  $\frac{1}{4}$  diameter wire 5 $\frac{1}{2}$ ins. long. Round the ends with a file slightly and hammer out straight.

Procure a pin bit or a twist drill and make a trial hole in a rough piece of wood. This must be an exact fit, otherwise it will cause the legs to split and allow the pins to work out.

## The Hinging Pieces

The centre of the hole for the pin joint is  $\frac{3}{4}$ in. from the end of the legs. Mark the centre off and bore accurately from each edge. In preparing the hinging pieces, plane up square and shoot the ends. The centre of the holes which receive the metal pins on the legs should be 1 $\frac{1}{2}$ ins. from the frame end of the table and  $\frac{3}{4}$ in. from the edge which fits against the table top.

This gives sufficient clearance for the leg to fold round and it also makes for position of the hole that will just about centre with the material.

## The Top

In making up the top, prepare the three plywood to the size, then mark in with your gauge a line on the under side fully  $\frac{1}{2}$ in. in. This is the line of the frame and the  $\frac{1}{2}$ in. allowed is for the 3in. surround.

The edge of the framing which is jointed against the top is the 1 $\frac{1}{2}$ in. side and the joints at the corners are made as a Fig. 3. These rails once they are fitted on, are marked at the outer corners of the top for the pin hinges of the legs, and are bored before being fixed. Glue the joints and screw but be careful that the screw nails do not come through the top.

Fit the metal pins into the legs then add these to the frame. Glue and screw the pieces for the legs to swing on in the position as shown by the dotted lines Fig. 2. In preparing the 3in. surround, decide in the first place how you are going to form the corner joints. They may be butted and nailed or they may be mitred and glued. If you

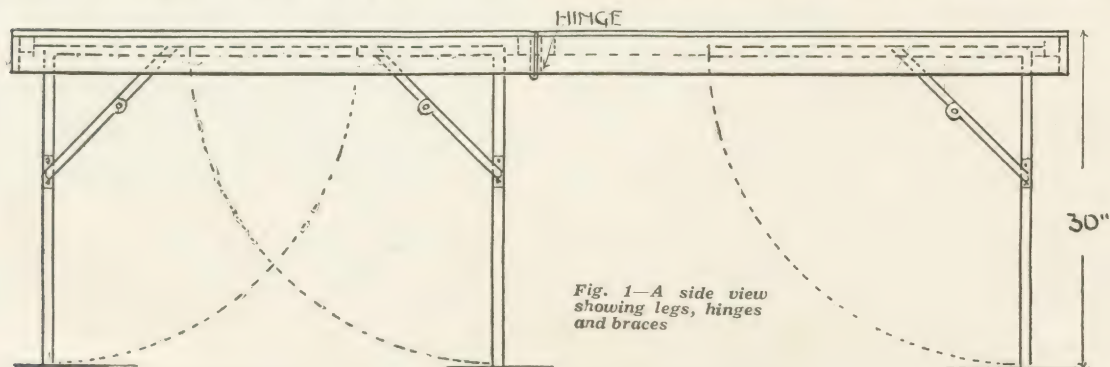


Fig. 1—A side view showing legs, hinges and braces



want to make a strong job you can dovetail the joints. In any case they must fit against the frame and be flush with the edge of the top, then hinge the two parts.

#### Better Joints for Folding

Or you could do away with the surround pieces and keep the framing pieces flush with the edges of the top. In place of making the joints at the corners an open mortise, the joints can be mortised and mitred as shown at Fig. 4.

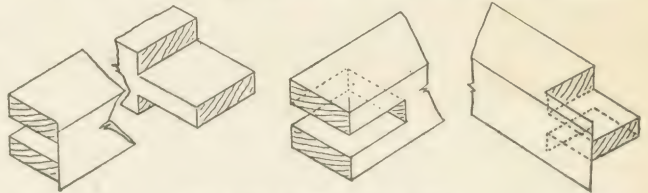
A very good plan and a saving in timber, but it has this little advantage that it leaves just space to enclose the legs when the table is folded up.

Unless the work is carefully carried out, one may find that the two halves of the table do not close up just as close as you would like them and it does not give the same rigidity to the table as you

might expect to get with the 3in. surround.

In fixing the brace stays for the legs, these should be put on at 45° when the legs are opened out as shown at Fig. 1. Open the legs out and place the metal brace as shown at Fig. 1 at the required angle. Mark the screw hole, bore and fit. A little adjusting may be required to get the exact position to allow the legs to be flat when the table is closed up.

Give the job a good rub down with glasspaper, then stain and finish with two coats of varnish.



Figs. 3 and 4—The joints to use

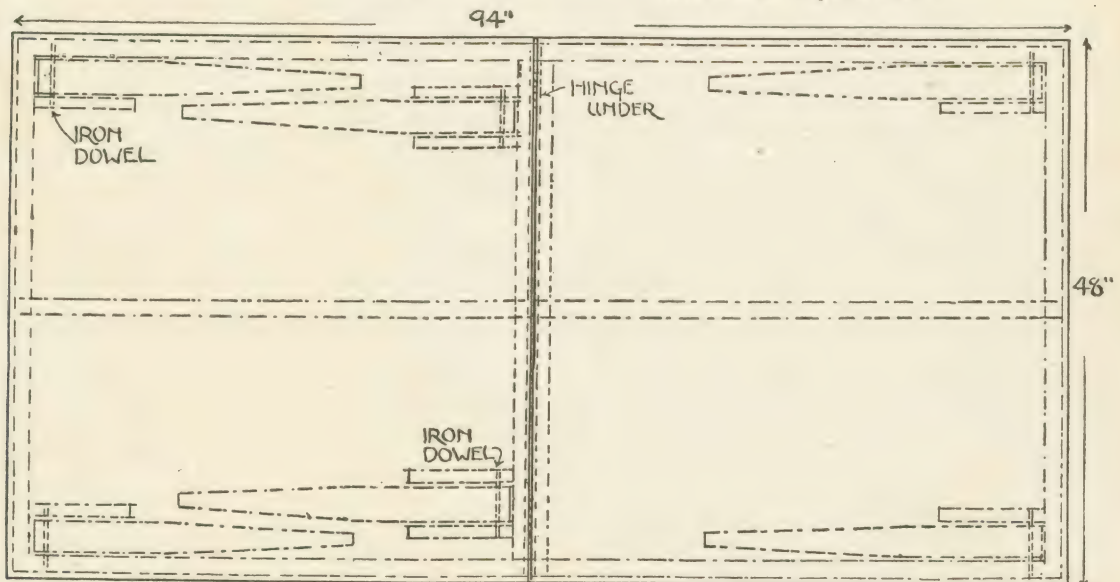


Fig. 2—An under view with dotted lines showing legs, struts, etc.

#### Nesting Boxes—(Continued from page 512)

The box is secured to the top of the post by iron brackets, screwed beneath.

At Fig. 4 is shown a food hopper, front view and side view, the latter with one side piece removed. The holes should be 1½ ins. to 1¾ ins. The bottom is a thicker piece of wood, at least 1 in. and the holes for the perches drilled through the front and sides into the bottom.

The lid is hinged to lift upwards, and overhangs front and sides by ½ in. to throw off rain-water. At A, a piece of wood is nailed across at a downward angle, to keep the bulk of the food supply from dropping too quickly. It just allows the food chamber to be refilled as the birds empty it.

#### Food and Fixing

A mixture of bird seed, wheat, bread crumbs and

tiny pieces of fat is excellent for food, also an occasional treat of crushed peanuts. The hopper can, like the single nest boxes, be secured to a tree trunk and will ensure a good company of feathered pets at all times.

It is not good practice to nail these to trees, the nails are not likely to do the trees any good. Better is it to secure them with galvanised iron wire, fastened to screw hooks in the boxes and twisted tightly enough round the tree to hold securely.

A still better method is sketched at Fig. 5. Here the wires are separated, and are joined together at the back of the tree by a stout, black japped spring.

This method does not mark the tree trunk unduly by interfering with the growth of the tree.





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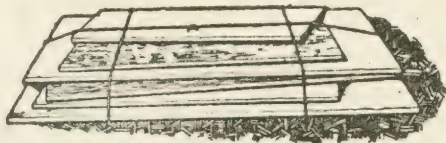
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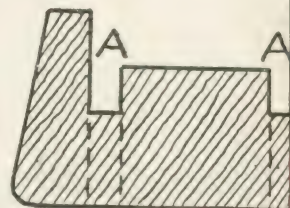
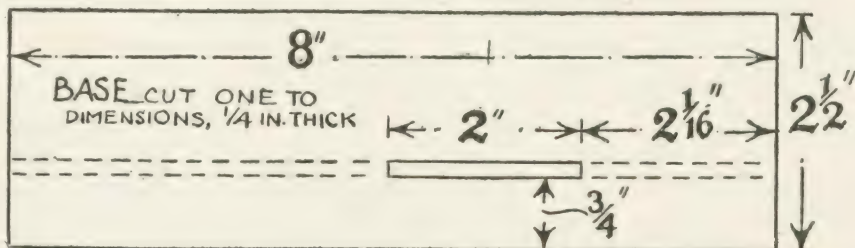
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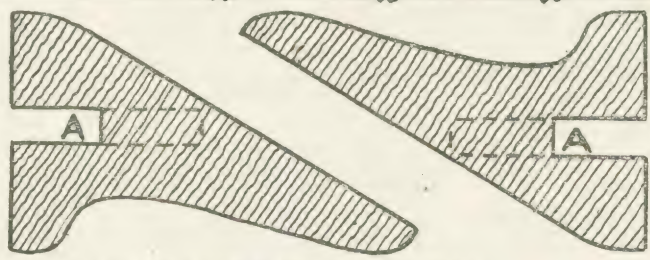
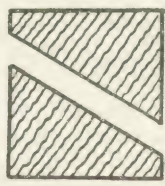
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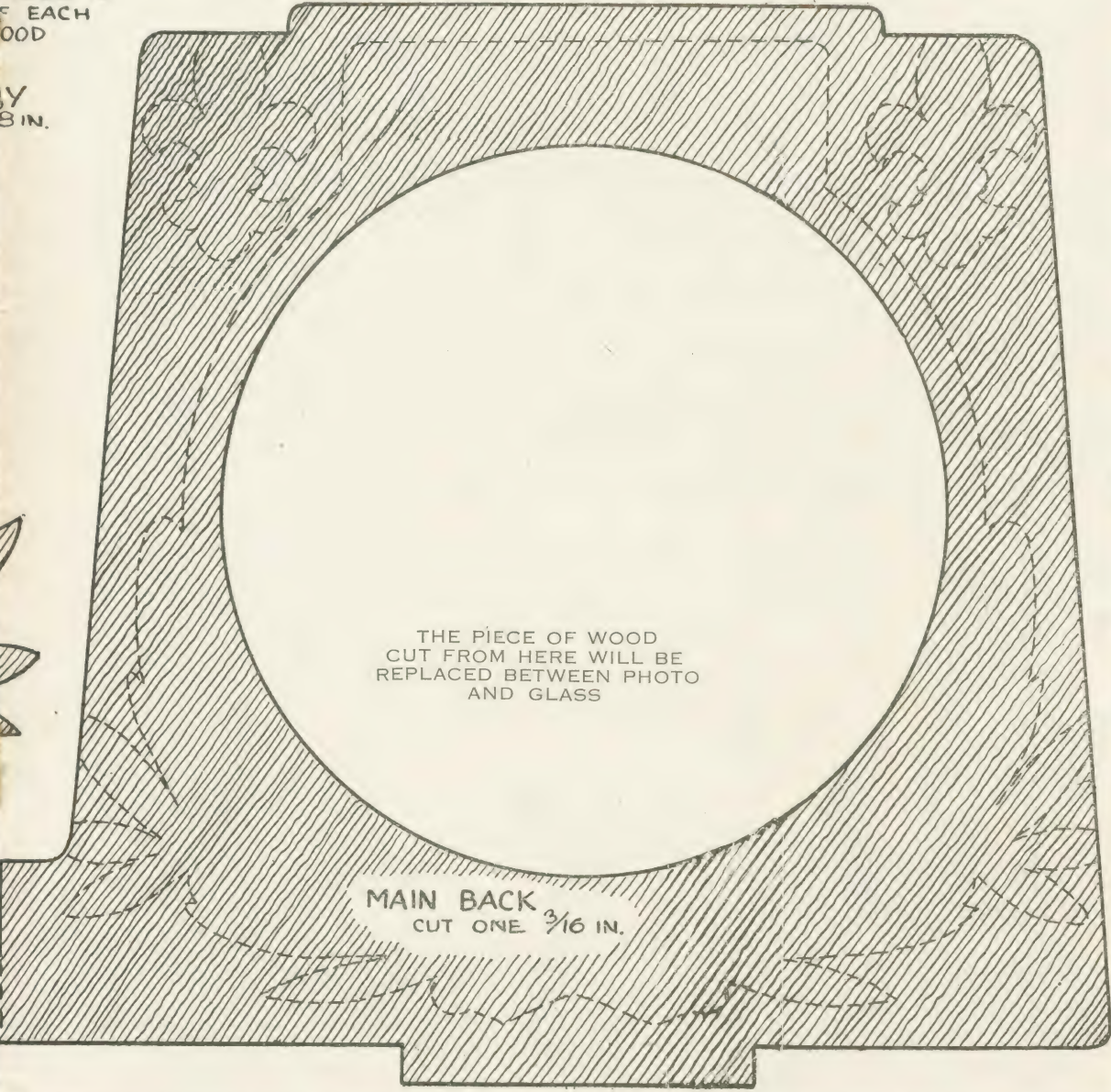


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MAIN BACK

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CUT ONE OF EACH  $\frac{3}{16}$  IN.

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OF EACH  
WOOD

BY  
8 IN.



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CUT FROM HERE WILL BE  
REPLACED BETWEEN PHOTO  
AND GLASS

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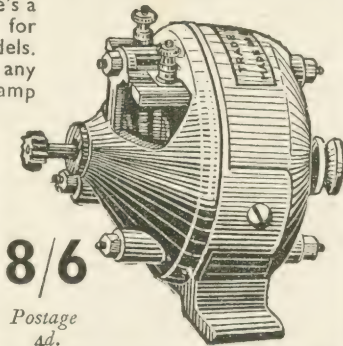


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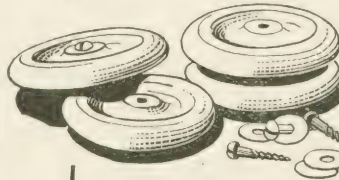
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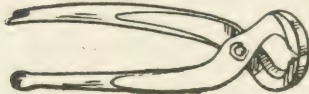
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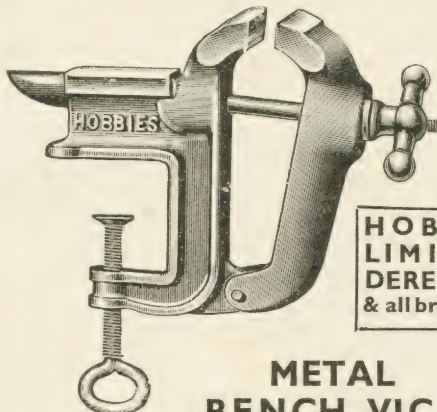
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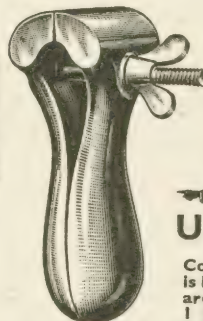
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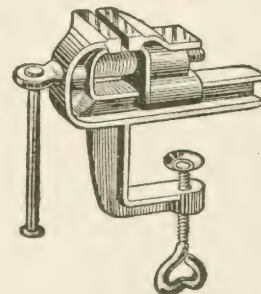


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**A**LTHOUGH the majority of toy motors and model dynamos are constructed with the simple H-type or Siemens armatures (Fig. 1) for the sake of extreme simplicity, this kind of armature has several drawbacks. When running as a dynamo it sparks badly at the brushes, and when used as a motor it is not self-starting. The Tripolar armature (Fig. 2), it is true, gets over the difficulty in regard to self-starting, but is still unsatisfactory for use in a dynamo.

### Slotted Drum Armatures

The performance of almost any small motor or dynamo can generally be considerably improved by substituting an armature of the Slotted Drum type (Fig. 3). Such armatures are built up from thin soft sheet-steel stampings of the required

and threading the other for a clamp nut and washer, but this entails more work and the use of a lathe and screwing tackle, not called for in the first two examples. Shoulders and nuts on such small shafts are also rather objectionable since they take up a lot of valuable room which would otherwise be available for the end windings.

Whatever way it is decided to fix the stampings the first thing to attend to before starting the winding is the insulation. The wire must never be wound into the bare slots or it is certain to get the covering damaged, when electrical leakages will take place. Brown paper, so often advised is by no means the best material to use for this purpose.

### Insulation

The proper kind of insulation is the hard grey substance known as Leatheroid, which is obtainable in sheets of various thicknesses, the most serviceable for small armatures being 8 mils thick (0.008"). A piece one foot square with a stick of Chatterton's Compound will suffice for a good many small armatures.

Two slips for the end insulation will be required just long enough to meet round the shaft, two washers the inner and outer diameters of which correspond to the shaft diameter and bottom of the slots in the stampings, and a sufficient number of strips of such size as to form channels to fit snugly in each of the slots, leaving these about 1/16 in. longer than the iron core so the windings cannot possibly come into contact with the bare metal where they turn round the angles.

These channels, end washers, and shaft insulation (Fig. 6) can all be held in position by a touch of Chatterton's Compound applied hot like sealing wax, and the final result should be that the entire core is completely clothed with insulation and secure against electrical leakage from the wire to the iron.

### Best Number of Slots

Drum armatures can be made with any number of slots, and in theory the more the slots the



Fig. 1—The Siemens or "H" armature



Fig. 2—Tripolar armature



Fig. 3—Slotted drum armature



Fig. 4—Knurled shaft for laminated armature core



Fig. 5—Fixing laminations on shaft with slotted washers

dimensions, pressed close together and clamped on the shaft so as to form a practically solid core. A "laminated" core of this description is far superior to one of solid cast iron, but it is naturally a little more difficult to fix.

For toys and very small machines several methods are used. One is to drive the stampings very tightly on a mild steel shaft that has previously had shallow grooves milled or "knurled" on the surface, giving sufficient grip to the stampings to prevent them from rotating (Fig. 4).

### Other Methods

Another way is to cut two shallow grooves on opposite sides of the shaft to take steel washers with U-shaped slots (Fig. 5). One washer is put in place first and sufficient stampings then assembled so that when pressed together hard in the jaws of a vice, the second U-washer can be just driven into the groove at the other end of the core.

The third method is, of course, the obvious one of turning a shoulder at one end of the shaft



Fig. 6—Leatheroid insulation for armature core

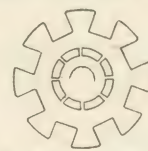


Fig. 7—8-part drum armature and commutator

better. There are practical limits however, restricting these on account of cost and considerations of winding space.



For most small machines with armatures less than zins. in diameter the usual practice is to provide eight slots. Each slot may contain one, two, or even three separate coils, requiring commutators of 8, 16 or 24 segments respectively, since there must always be as many bars in the commutator as there are coils on the armature, no matter whether they are grouped one, two, or three per slot.



Fig. 8 — Correct theoretical span of armature coils



Fig. 9 — 8-slot armature with first coil in position



Fig. 10 — Two coils in position on 8-slot drum armature



Fig. 11 — 8-slot armature completely wound

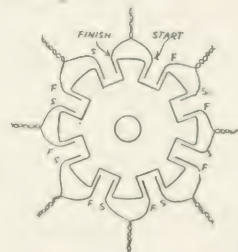


Fig. 12 — Interconnections of the armature coils

Since an 8-slot core (Fig. 7) and an 8-part commutator suits most small machines when wound for low voltages and are simpler to deal with, they will be taken for the present example.

### First Principles in Winding

The whole object in hand-winding a small armature is to get the coils on so that they do not slip. It does not matter in the least in what order they are wound, but each coil must span the same number of slots and must be wound in the same direction, while all wires must lie as closely as possible to the core and to each other, the object being to get the maximum number of turns possible in the available winding space without damage either to the wire coverings or to the core insulation.

Double silk covering winds more closely than double cotton, but is more easily damaged. Enamel coverings require great care in handling, but pack more closely than any other form of insulation; they should only be used, however, with very low voltages.

For general use the special fine double cotton covering known as "6-mil d.c.c." is the easiest to handle, and is less liable to slip than either silk or enamel.

### Spacing the Coils

The first step will be to decide how many slots each coil must span. This is quite easily settled since the coils should always have the same span as the pole pitch, that is the distance between one pole of the field magnet and the next

(Fig. 8), so the two sides of any one coil will lie under field poles of opposite polarity.

This is the theoretically correct position but in practice a slight departure from this rule is permitted, and the span of the coils may be reduced by one slot in order to avoid bunching up round the shaft.

Instead, therefore, of winding the coils in slots exactly opposite one another, in the case of

armatures running in 2-pole fields, the coil span may be reduced to slots 1 and 4 without any great detriment to the performance, making the winding a great deal easier.

### Order of Winding the Coils

Starting with Coil No. 1 each wire is laid down carefully and tightly in the slot, beginning at the edge furthest away from the shaft centre, and layer by layer put on until the slot is just half full.

Crossings must be avoided except at the ends. The starting end of the coil should be distinguished from the finishing end by colouring it with a touch of red ink or paint, and when the coil is completed the two free ends are twisted lightly together temporarily to avoid it slipping, until the final connections are made (Fig. 9).

Coil No. 2 is then started in the slot previously half filled, and on the opposite side to that having the twisted ends brought out, and is then wound and finished off in exactly the same way (Fig. 10). Coils 3 to 8 are to be treated in a similar manner, when the final appearance of the armature should be as Fig. 11.

Keep the wire clean and free from dirt or oil, pulling it tight but not stretching it. If necessary it can be pressed down firmly with a hard wood wedge, getting each turn in its proper place, but on no account must a hammer be used, or the covering will become cut through.

### Connecting Up the Coils

The next stage is to interconnect from coil to coil, before attaching the coils themselves to the commutator bars. This is quite simple if all the coils have been wound in the same direction, and all the starting ends marked.

The rule is to take the start of each coil and connect to the finish of the coil in the next slot, twisting the ends together tightly after baring the covering of the wire so that they may make good electrical contact. This gives the appearance

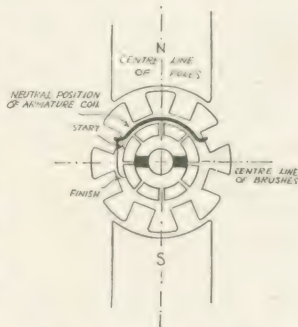


Fig. 13 — Finding the neutral position for commutator connections



shown in Fig. 12, and the eight junctions so made will each be attached to one segment of the 8-part commutator by careful soldering.

Before this is done it is advisable to slip a short length of cotton sleeving or empire cloth tubing over the bared wire junctions to guard against leakage to any of the underlying wires they cross over.

#### Connecting to the Commutator

The correct connections between coils and commutator bars are very important, as there is only one correct position for them and the armature will not work in any other.

To find this position make a full sized sketch showing the armature, field magnet poles, commutator, and brush position, as in Fig. 13. Turn the armature so that the plane of Coil 1 lies at right angles to a centre line passing through the north and south poles of the field magnet.

At the same time the commutator must be in such a position that the brushes, if they have a fixed position, each make contact with two segments on either side, that is with the mica insulation between the segments coinciding with the centre line of the brushes.

Then take the two junctions which contain the starting and finishing ends of coil 1 and bring them down to the two commutator bars lying under the nearest brush. The remainder of the junctions will then follow on in regular progressive order.

These connections are known as the "neutral" position, and the armature will then be able to operate either as a generator or as a motor, and will run in either direction with suitable field polarity. A final coat of good insulating varnish is recommended.



Extracts from and answers to some of the questions submitted by readers likely to be of interest to others

#### "Rotten Egg" Gas.

**P**LEASE tell me how to make "rotten egg" gas in a liquid form.—(W.I.)

"**R**OTTEN EGG" gas, known chemically as sulphuretted hydrogen, is moderately soluble in water, but it is important to use water which has been warmed. There are several ways in which sulphuretted hydrogen may be prepared, the readiest method being by the action of either sulphuric or hydrochloric acid upon ferrous sulphide. The ferrous sulphide in broken fragments is placed in a two-necked bottle, and the dilute acid poured upon it. The gas is rapidly evolved without the application of heat, and may be conducted via a delivery tube into a pneumatic trough, or large dish, containing water and collected in the usual way in a glass jar. If you do not possess a two-necked bottle you could use a wide necked bottle with two tubes through the cork, one through which you pour the acid and the other through which the generated gas makes its way.

#### How Plywood is Made

**W**ILL you tell me how the large sheets of plywood are obtained from the trees?—(B.B.)

**P**LYWOOD is made by taking a long strip from a tree, then gluing it to more strips of a similar character. Instead, however, of the tree being cut longways in logs and planks, it is put

on a rotary machine with a knife up against the edge of it, then by turning the tree on to the knife, a very thin layer is stripped off much in the same way as a pencil sharpener cuts off fine layers of pencil. By rotating the tree, of course, the knife gets off an almost endless strip the width of the log, and as long as necessary. These are then cut into sheets, covered with special glue and two or three sheets or more as required laid on top of each other to form the necessary laminations. The whole is placed in a steam cramp, exerting a very big pressure, and forcing the ply together.

#### An Oscillating Cylinder

**C**OULD you explain to me how an oscillating cylinder is worked?—(R.H.)

**A**N oscillating cylinder has a fixed to it, a flat valve face, which moves on a fixed valve face fastened to the engine frame. A pin is fixed to the cylinder and passes through both valve blocks and a spring behind it draws the two valve faces together. Rigidly attached to the piston is a rod that connects to the crank pin, consequently as the crank shaft revolves, the cylinder moves or "oscillates" backwards and forwards about the pivot pin. This relative movement of the valve faces, provides the means whereby steam can be admitted and exhausted from the cylinder. This is done by means of a single hole

through the cylinder valve block into the cylinder. At one end of the stroke this hole has moved to the limit of its travel in one direction, then finds itself opposite a hole in the fixed valve face, the said hole communicating with the live steam pipe. Steam, therefore, passes into the cylinder and forces the piston along the cylinder, but while this is happening, the cylinder moves and closes the steam pipe hole and gradually opens a second hole that either is open to the air or is connected with the exhaust pipe. Consequently, the movement of the cylinder itself alternately opens and closes the inlet and exhaust valve ports (or holes).

#### Polishing Cement Work

**C**AN you give me any information on polishing cement work? I want to make a fireplace in cement tone, but I find that when mixed it dries with a dull surface.—(F.W.E.)

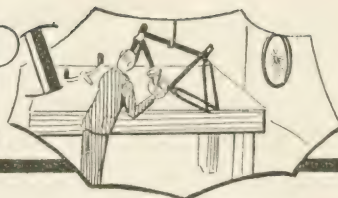
**T**HIS can be done by rubbing with Carborundum and finishing with snakestone. The Carborundum is of varying grades, the coarser being used first. It can be obtained in block form for hand polishing, or in the form of discs for use by machine. A fine dull concrete surface can be much improved by an ordinary wax polish, but, of course, such a polish requires renewal. A very good initial polished surface can be obtained by casting concrete against glass.





# HINTS & TIPS

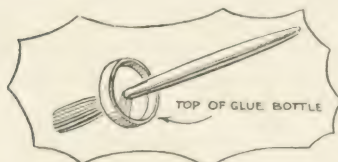
## WORTH KNOWING



For original Tips published the sender will receive a Hobbies Handy Propelling Pencil. We cannot acknowledge all those received, or guarantee to print them. Send to The Editor, Hobbies Weekly, Dereham, Norfolk. Keep them short and add rough pencil sketches if possible.

### Prevents Dirty Fingers

HERE is a hint for model makers. When painting or varnishing your models, to stop



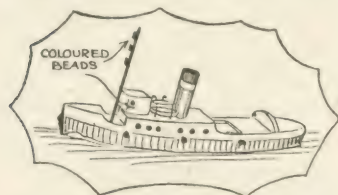
getting your fingers wet with paint or varnish, put one of the tops from a glue bottle over the handle as in the drawing.—(K. J. Viney).

### Fretsaw for Leather

THE other day my brother-in-law was mending some shoes and was using a knife, so I suggested he might use a fretsaw. He found that it made a very good job and was able to cut the soles out to the exact size required. Pencil mark the size you want on a piece of leather and cut round with fretsaw, this will save a lot of cutting.—(W. Jeffrey).

### Model Tugs

I ENCLOSE designs of a model tug which I have made to add to the realism of a model of the "Stirling Castle." The mast is a pin minus head. Hull, bridge and boats are scrap wood. Davits are pins, navigation lights are beads glued in position. The funnel is dowel rod, and the



fenders are made of twine glued on the sides. The colours are optional. The size of the "Stirling Castle" or similar ship is exaggerated when this tug is placed alongside.—(M. A. Halls, Jnr.)

### Baring Wires

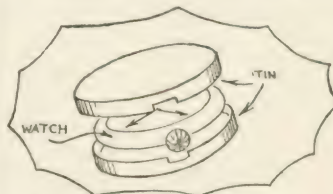
WHEN baring the ends of flex and insulated wire use a three-cornered file. This reduces the chance of cutting the wire as when a knife is used.—(N. Beare).

### Cutting Cork

FELLOWS who have found it difficult to cut cork cleanly will find they can do so by the following method. Before starting to cut, dip the blade of the knife into cold water, keeping this beside you to dip into when needed. You will find that you can even chip or carve cork in this way.—(C. Nobbs).

### Clean Watch Holder

THOSE of you who work in a dirty or dusty places will be able to keep your pocket watches cleaner if you make this simple



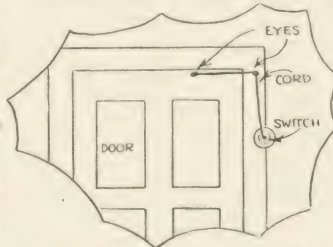
holder. Cut a snip out of the lid and base of a boot polish tin to let the winder project, and you have a useful container.—(H. N. Hill).

### For Lino Cutting

NEXT time you get old nibs don't throw them away. Put them the wrong way in the penholder, sharpen with emery paper and you have an excellent cutter. Or if you have an old umbrella, the ribs sawn to a short length and sharpened will serve the purpose just as well.—(M. Roberts).

### Automatic Light Switch

WHERE a cupboard or store-room has an electric light controlled by a switch outside the door, it is easy to forget to switch off after the door has been shut. Here is a simple method in which the door puts the light out when closed. Run a cord through an



eye screwed into the door frame, nearly level with the top of the door. Fix the other end to an eye placed level with the first, about a foot away from the hinged end.—(R. Sanderson).

### CROSSWORD SOLUTION

This is the correct solution of the Crossword in the competition last September. It could not be shown before because of the Overseas closing date.

C	A	M		C		B	O	X
	M	E	T	E	R		U	S
S		D	I	V	E	R	S	
L	E	A		E	A	S	T	
Y	O	L	K		K		W	E
			N	O			V	I
	G	R	O	V	E		O	T
S	L		B	E	V	E	L	E
O	A	T		N	O	R	T	H
O	D	E		K	R		O	N
T	E	A	M		E		B	E

### Invisible Ink

HERE is a tip for making invisible ink. Dissolve some Potassium Nitrate in as little amount of water as possible. Then draw on a piece of thin paper an outline of a man's head or an animal, and allow to get perfectly dry. Then take a piece of thin string and apply the smouldering end to one corner of the drawing. It will be found that the little flame will creep all around the drawing and burn out the required shape.—(B. Isaac).



# THE PUPPET SHOW

THE jointed Puppets are now dressed and the control strings penetrate the clothing in the appropriate places. There are several methods of grouping the strings for the control of the 'dolls,' but the method here described serves well, particularly with our small 'dolls.'

A framework as in Fig. 1 is made up from  $\frac{1}{8}$  in. by  $\frac{1}{2}$  in. stripwood (Hobbies Handbook p. 132). The joints are halved, glued and pinned. Ordinary pins may be used, the projecting point being nipped off  $\frac{1}{16}$  in. from the wood and carefully bent over and tapped down with a hammer. Referring to Fig. 1, the letters indicate the positions where the control strings are to be fastened.

## Control Strings

Small screw-eyes are screwed into the underside of the frame at the positions marked A, B, C, D, E, F and G. The first control string to fasten is the head string and this should be secured to the screw-eye at A.

The string should be arranged so the feet are about 36 ins. from the framework. The V-arrow in Fig. 1 shows the direction of view for the Puppet and so B on the framework is the back, and G is the front.

The next string to be fixed is the one fastened to the base of the spine and this should be secured to the screw-eye at B arranging the length so the string is just taut (when the framework is horizontal from B to G) without pulling the body out of the vertical.

## Leg Strings

The leg strings are the next to be dealt with, and these are fastened to the screw-eyes in positions C and D, arranging the lengths so that the strings

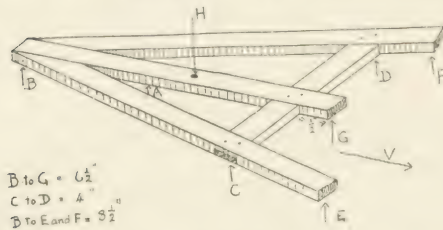


Fig. 1—The frame for string control

are just taut when the framework is horizontal both from B to G and from C to D.

If these strings have been correctly fitted the following movements should result. On rocking the framework, keeping B, G, horizontal, the knees should be raised alternately. This movement when carried out slowly and deliberately gives the walking motion.

By keeping C, D horizontal and slowly dropping B the sitting posture is reached. A bow is obtained as a result of tilting the framework slightly forward.

The fixing of the arm control strings represents a somewhat more difficult task, and you should enlist the help of a friend in the holding of the framework. Keeping B, G horizontal, tilt C

## CONTROL & WORKING THE MARIONETTES (CONCLUDED)

upwards until the thigh of the right leg is raised to a normal walking position.

Maintaining this position, secure the left hand control string to the screw-eye in position D, allowing the left hand to be very slightly raised and thus flex the elbow. Still keeping B, G horizontal, tilt D upwards until the left thigh is in a normal walking position. In this position the control string of the right hand is secured to the screw-eye C, allowing the right hand to be very slightly raised.

## Walking

If the arm strings have been correctly fitted the normal walking motion should cause merely the slightest movement of the arms. More exaggerated arm movements are made by pulling gently at the strings with the fingers of the other hand.

The screw-eye at G is for securing the control string attached to any object to be handled by the Puppet, e.g. walking stick. To all such objects there should be a wire hook which will fasten to the Puppet's wrist.

The 'doll' is now ready to take the stage and is stored while the Theatre is adapted to suit string controlled Puppets. It is fatal to store the Puppets in a box as the strings and limbs become tangled, and always just at some important time. For storing, bore a small hole in the centre member of the framework (indicated in Fig. 1 by H-arrow) and make a hook from stout wire as shown in Fig. 2 (a) and (b). The part 2 (a) is made first and inserted through the hole at H, after which the hook is shaped.

A storage rack is easily made as shown in Fig. 3, a sheet being thrown over to protect the Puppets from dust and dirt.

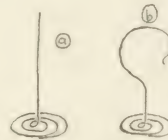


Fig. 2—Hooks for the frames



The whole of the spotlight fittings on the roof must be removed and if convenient secure the spotlight to some vacant bracket nearby. Lengthen the flex so the spotlight is still controlled from the switch on the body of the theatre.

The stage space must be increased as far back as the drop scenery and this is done by making a small platform of the same height as the existing stage to stand inside the theatre.

With a fretsaw remove a panel from the roof at the front, 7ins. wide and equal in length to the width of the roof. This panel should not be damaged but preserved intact for replacing when the Glove Puppets are to be used.

Through this slot, behind the wings, the Puppets are lowered on to the stage. Subsequent action is controlled by the performer through this slot. As you will appreciate the control of the Puppets is from above and so a large screen must be erected over and round the theatre to conceal from the audience the operations performed.

#### Above the Work

The performer must be 'right on top' of his work and must position himself accordingly by kneeling behind the theatre. Or, if the standing position is preferred, the height of the theatre must be arranged to suit.

A suitable screen is shown in Fig. 4, and is made from battens and thin plywood. Cardboard may be used instead of plywood. The side pieces of this screen and the front are hinged at A (Fig. 4), and vertical guides are screwed on to the sides of

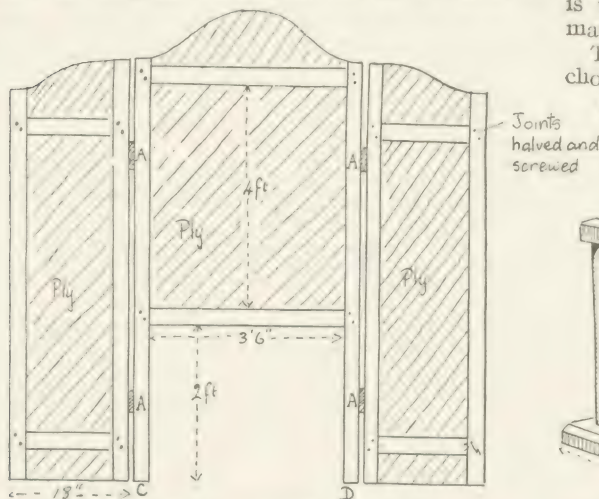


Fig. 4—A suitable screen with hinged sides

the theatre to take the battens C and D. These guides are placed as near to the front as possible.

With the string Puppets there is greater scope with stage properties and setting—whole rooms may be furnished with miniature furniture for the use of the tiny actors. This consideration will be left to the ingenuity of the 'stage manager.'

The stage is now set, the actors are fully rehearsed and so—on with the show.

#### A Few Suggestions

It is impossible to rehearse an act too many

times. That 'practice makes perfect' is very true with the Puppet Show and the amateur Puppeteer could not have a more sound motto.

Remember that the Puppets both Glove and String, have a limited scope in their actions, although these limitations vary with the ingenuity of the performer. Thus it is up to you to make the most of these actions by insisting upon deliberate decisive simple movements. Any sign of jerkiness immediately dispels any suggestion of reality and impressiveness.

#### The Lighting

Make the most of your stage lighting. With the standard lighting described in this series there are a great many beautiful and effective combinations, but no doubt you will be able to work out a few of your own ideas on similar lines.

Experiments and new ideas are to be welcomed in all the various branches: e.g. Action; Lighting; Scenery; Stage Properties; Voicing and Off-Stage Effects.

#### Points in Speaking

With regard to the voicing, there are two most important points to bear in mind. In the first place the voice should be made to carry so that everyone in the audience can hear what is going on. This is not so easy when you remember that the speakers are behind the scenes.

Secondly, the timing of the speech with respect to the actions of the Puppets must be very accurate to be effective. One good way of ensuring this is to allow, as far as possible, the speaker to manipulate the Puppet concerned.

The production of stage props. is left to the choice and skill of the stage manager. Bear in mind, however, that it is not wise to overburden

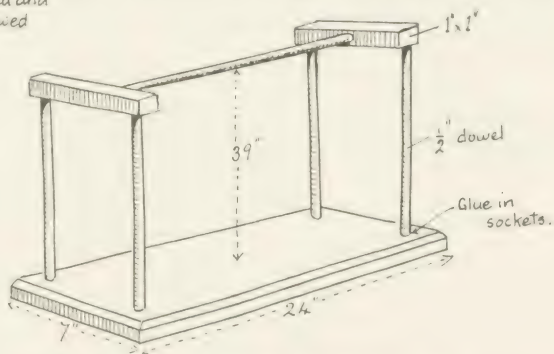


Fig. 3—A suitable storage rack as mentioned

the stage for two very good reasons. Too many props. restrict the movements of the puppets and also distract the focus of attention.

Off-Stage Effects once again provide a riot of opportunity for the ingenious mind. Among scores of possibilities the following will provide a nucleus.

The use of a gramophone, etc., is suitable for incidental or theme music. Wind is produced from dried peas rolled round a drum head, or rain effects from rice grains shaken about in blown-up paper bag.



# The EDITOR'S NOTES



THE other day I read quite an amusing little tale of two families, and the happy solution to one set of trouble. Two ladies had met, and one was moaning how the men and boys littered her kitchen and living room when they were at their hobbies. "Paper, wood and screws and nuts and bits and pieces everywhere! Glue on the carpet, varnish on the chairs and so on." You know what it is, don't you? The other lady—to be different, as usual, said—"Oh no, her house was not like that—and she had three growing boys and a full grown husband! Well, her house was clean and spotless and Mrs. Otherlady could come and see it anytime."

ACTUALLY, you see, the wise lady had realised that men folk want somewhere to work where they do not have to be worried about untidy shavings, some spots of glue or other incidents. So she had arranged for a shed to be built at the bottom of the garden where all could work to their heart's content. And *not* have to worry about being untidy.

THE tale has a moral, of course, and if you too happen to be bothered in the same way, why not see if it cannot be arranged that a shed or workshop be provided? Any handyman can run in his own electric light, whilst a second-hand oil stove can often be picked up cheaply to supply you with the necessary warmth for body or glue. Put that suggestion forward next time you are being "told off" about being so untidy.

THE making of model trains is always a fascinating hobby, but the usual trouble is the accommodation for the complete lay-out.

This is where the friendliness of pals and the co-operation of effort comes in. By combining forces you can make a wonderful railway layout and usually one of the party has a shed or spare room in which the system can become a permanent fixture. It saves so much trouble if you do not have to take your lines to pieces and clear up all the parts every time you give up playing with them. An instance of friendship.

I HEAR by the way of a circle of business men—about 30 of them—in Cardiff who run their own private railway model in the basement of a city hall. They have 200 ft. of electrified track with proper organisation for running the passenger and goods trains. So you see how fascinating a layout can be become when a few band together to form a club!

THE popularity of this hobby has undoubtedly grown a great deal of late years and much of it must be due to the very realistic models and accessories which can be obtained. All rolling stock now is obtainable very true to type, and everything in connection with it is equally correct. The fun of just "running a train" is considerably increased by having a complete system with signal boxes, platforms, stations, figures, roadways, approaches, goods sidings, etc. So one can make up a whole railway by getting a little at a time and spending a few pence on extras every now and then.

ONE of the troubles of this business, however, is the question of taking it all up when the room is required. An excellent method of overcoming this, however, is to fix the parts temporarily to boards. You can have your lines fixed down to long pieces of wood which can be painted to represent ballast. Then your station layout, and your goods yards can be fitted to other larger pieces of plywood so the whole lot can be laid down at one operation. The connecting pieces of any lines can be allowed to project over the edge so they can fit into the adjoining parts as required.

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Correspondence should be addressed to: The Editor, Hobbies Weekly, Dereham, Norfolk, and a stamp enclosed with the Reply Coupon from Cover iii if a reply is required. Particulars of Subscription rates, Publishing, Advertising, etc., are on cover iii.

I HOPE that readers are taking note of the Fretwork series of hints now running (there will be another next week) because it is written to be helpful to everyone who uses a fretsaw. Don't think that it is written specially for the beginner and not for you people who are really expert. No one is too old or too experienced to learn, and you, I feel sure will find many little things you did not know. The Editor



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The advertisements are inserted at the rate of 2d. per word prepaid. Name and address are counted, but initials or groups, such as E.P.S. or £1/11/6 are accepted as one word. Postal Order and Stamps must accompany the order. They will be inserted in the earliest issue. To sell anything except fretwork goods or those shown in Hobbies Handbook. Orders can be sent either to Hobbies Weekly, Advertisement Dept. 30/32 Ludgate Hill, London, E.C.4, or Dereham, Norfolk.

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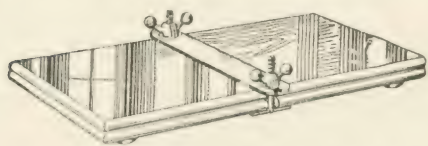
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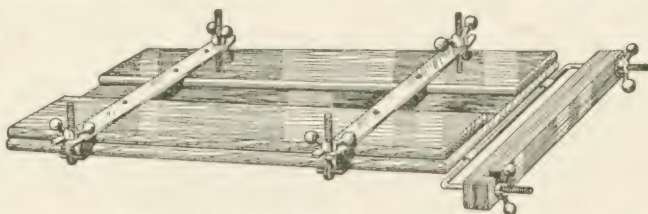
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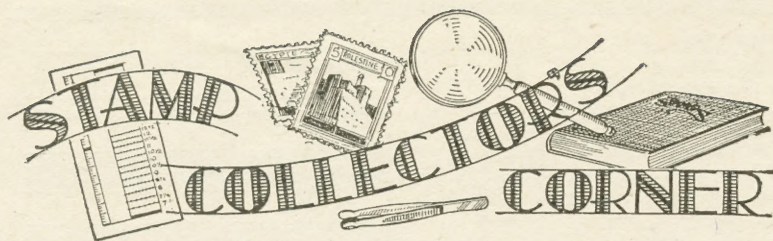
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## NOTES ON NEW ISSUES

WE are now starting the stamps of the new reign, and this week we illustrate two of these. The first is from Southern Rhodesia, and without doubt it will be admired by all readers of Hobbies Weekly.

The set comprises thirteen stamps, all of the same design and varying in face value from a halfpenny to five shillings. The values are to a certain extent curious, being:— $\frac{1}{2}$ d., 1d.,  $1\frac{1}{2}$ d., 4d., 6d., 8d., 9d., 10d., 1/-, 1/6, 2/-, 2/6 and 5/-.

Notice the gap from  $1\frac{1}{2}$ d. to 4d., and the value 1/6, also that there is no value 3d. (as was the case of the Coronation stamps). This bears out the point which we explained gave the enhanced value of the threepenny Coronation stamp some time ago.

The design for the Straits Settlements stamps is similar to that which has been in use for some time, except that the portrait is of King George VI. It may be of interest to notice that the King is looking the reverse way to that in the previous issue.

No doubt readers are already aware that this change is always made in the case of coins, but it is not usual in the case of postage stamps.

So far only three values have come to hand the 2c., 5c., and the 30c.



**Southern  
Rhodesia**

**Note the head  
to the right**

**Fire at Panama!**



**A Dutch  
Painting**

Canada comes second with regard to King George VI. portraits with six values. That is, if we exclude the Morocco Agencies which are British stamps surcharged for use in Spanish and French Morocco and Tangier.

Australia so far has the 2d. and the 3d. There are two types of the latter. The first type (generally called type 1) has less

shading on the sprays of leaves at the top, and the letters "T" and "A" of postage are joined together. The price that is being asked for this first and better type is from 5/- to 10/-.

This is a variety that you should look for among your own collection, and also among any Australian stamps that come to your hands, as it was not noticed for a little time and may quite well become even more valuable than it is now.

If you spot this and have not got a 'written-up' collection then you should make a note that it is type 1 on the stamp mount which holds the stamp into the album.

Panama has just issued a set of stamps for the jubilee of the Fire Brigade. Really one should call it two sets because there are stamps for ordinary postage and also some for air stamps. In the ordinary set there are six stamps.

The 2c. which is shown here gives a picture of a street with one of the houses on fire, the firemen can be seen in the foreground. The colour is vermilion with the inscription in white on top of the design. Where the smoke is shown it is not easy to read the words which are 'Jubileo cuerpo de bomberow.'

Another value of the set shows a fire engine, and another the

badge of the fire brigade, while the others show portraits. Three stamps are reserved for the air mail. Unlike Great Britain a number of countries have special stamps for their air mail correspondence, and Panama is one of them. Messrs. Harrison and Sons executed these stamps in photogravure.

The fourth illustration is of

one of the Dutch Child Welfare Christmas Charity stamps, and the design is taken from the painting "The Laughing Child" by Franz Hals.

This famous painter who lived from about 1580 to 1666 was born in Antwerp where he is said to have studied under Rubens. His fame as a portrait painter is world wide, and he is noted for his skill in catching fleeting expressions, particularly mirth and amusement.

Although throughout his life he had sufficient, he had to struggle in his old age against poverty. His best known work is "The Laughing Cavalier."

The other Christmas Charity stamps which may be mentioned are those from Switzerland. Since this is the Silver Jubilee year of the Pro Juventute series it is rather surprising that they have not celebrated this with a more attractive set. The two lower values show portraits, one of General Henri Dufour, the next Nicholas von Flue, but they are hardly intriguing pictures. The head of the child on the 20c. and the 30c. is almost grotesque, the size of the head being much too large for the neck.

The only Jubilee note about this set appears to be the issue of a special miniature sheet of two stamps. These miniature sheets seem to the writer to be definitely bad for philately. They are not issued for the purpose of postage stamps, they are simply sold to obtain money without the intention of doing any service in exchange.

If they were intended to pay postage the various authorities would not issue them in sheets of two or four stamps—the cost of such production is far in excess of the normal method. They are issued solely with the idea of getting money from collectors and others who want to have a small memento of some occasion.

They will always be issued so long as there are people to buy them, and the only way of stopping the issue is to refuse to have anything to do with them. Then the authorities will find that they do not pay, and stop issuing them.

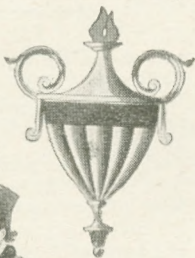


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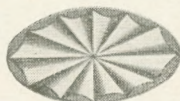


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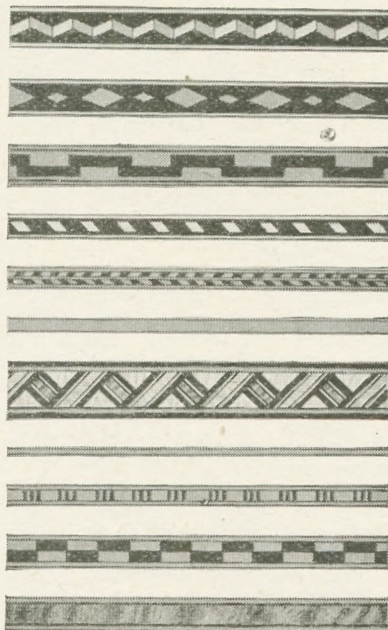
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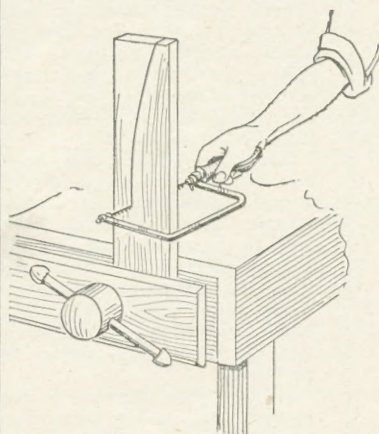
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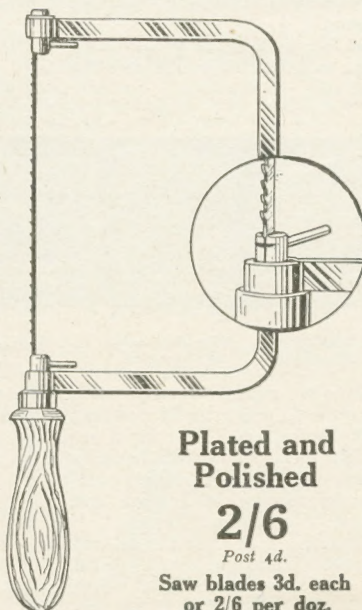
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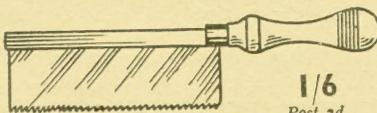
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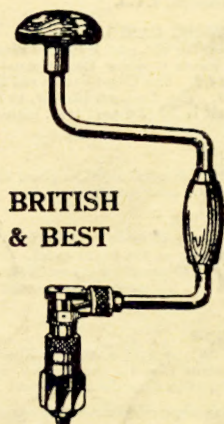
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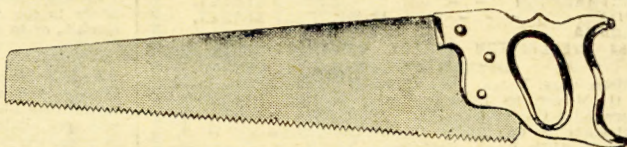
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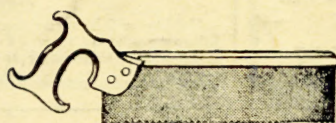
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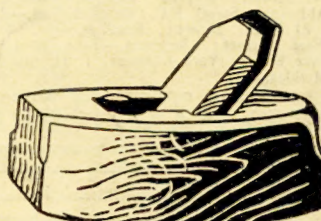
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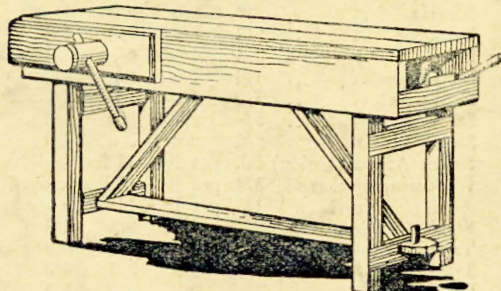
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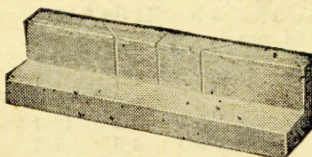
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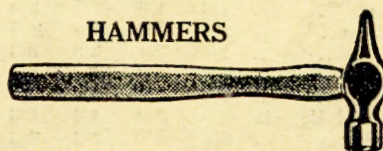
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